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3-independence number of graphs

We present a spectral bound on the 3-independence number of graphs and apply this bound to well-known families of graphs. We investigate tightness of this bound on the Hamming graph $H(d, q)$. In particular, we give a construction of 3-independent sets in $H(d, 2)$ and show tightness of the bound for $d = 2^r$ and $d = 2^r - 1$ with $r \in \mathbb{Z}^+$.